



## SEQUENCE LISTING

<110> University of Dundee, University of Dundee  
<120> Polypeptides, Polynucleotides and Uses Thereof  
<130> 350013-72  
<140> 09/581,651  
<141> 2000-10-10  
<150> PCT/GB98/03766  
<151> 1998-12-15  
<160> 44  
<170> PatentIn version 3.2  
<210> 1  
<211> 675  
<212> PRT  
<213> Homo sapiens  
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Asn Leu Val Ala Thr Cys Leu Pro Val Arg Ala Ser Leu Pro His Arg  
1 5 10 15

Leu Asn Met Leu Arg Gly Pro Gly Pro Gly Leu Leu Leu Leu Ala Val  
20 25 30

Leu Cys Leu Gly Thr Ala Val Pro Ser Thr Gly Ala Ser Lys Ser Lys  
35 40 45

Arg Gln Ala Gln Gln Met Val Gln Pro Gln Ser Pro Val Ala Val Ser  
50 55 60

Gln Ser Lys Pro Gly Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn  
65 70 75 80

Gln Gln Trp Glu Arg Thr Tyr Leu Gly Asn Val Leu Val Cys Thr Cys  
85 90 95

Tyr Gly Gly Ser Arg Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu  
100 105 110

Glu Thr Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp  
115 120 125

Thr Tyr Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile  
130 135 140

Gly Ala Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His  
145 150 155 160

Glu Gly Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His  
165 170 175

Glu Thr Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys  
180 185 190

Gly Glu Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp His Ala  
195 200 205

Ala Gly Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln  
210 215 220

Gly Trp Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg  
225 230 235 240

Ile Thr Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr  
245 250 255

Ser Tyr Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn  
260 265 270

Leu Leu Gln Cys Ile Cys Thr Gly Asn Gly Arg Gly Glu Trp Lys Cys  
275 280 285

Glu Arg His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe  
290 295 300

Thr Asp Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro  
305 310 315 320

Pro Pro Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val  
325 330 335

Gly Met Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr  
340 345 350

Cys Leu Gly Asn Gly Val Ser Cys Gln Glu Thr Ala Val Thr Gln Thr

355

360

365

Tyr Gly Gly Asn Ser Asn Gly Glu Pro Cys Val Leu Pro Phe Thr Tyr  
 370 375 380

Asn Gly Arg Thr Phe Tyr Ser Cys Thr Thr Glu Gly Arg Gln Asp Gly  
 385 390 395 400

His Leu Trp Cys Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys Tyr  
 405 410 415

Ser Phe Cys Thr Asp His Thr Val Leu Val Gln Thr Gln Gly Gly Asn  
 420 425 430

Ser Asn Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His Asn  
 435 440 445

Tyr Thr Asp Cys Thr Ser Glu Gly Arg Arg Asp Asn Met Lys Trp Cys  
 450 455 460

Gly Thr Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro  
 465 470 475 480

Met Ala Ala His Glu Glu Ile Cys Thr Thr Asn Glu Gly Val Met Tyr  
 485 490 495

Arg Ile Gly Asp Gln Trp Asp Lys Gln His Asp Met Gly His Met Met  
 500 505 510

Arg Cys Thr Cys Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Tyr Ala  
 515 520 525

Tyr Ser Gln Leu Arg Asp Gln Cys Ile Val Asp Asp Ile Thr Tyr Asn  
 530 535 540

Val Asn Asp Thr Phe His Lys Arg His Glu Glu Gly His Met Leu Asn  
 545 550 555 560

Cys Thr Cys Phe Gly Gln Gly Arg Gly Arg Trp Lys Cys Asp Pro Val  
 565 570 575

Asp Gln Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly Asp  
 580 585 590

Ser Trp Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr  
 595 600 605

Gly Arg Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr Pro  
 610 615 620

Ser Ser Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser Gln  
 625 630 635 640

Pro Asn Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His Ile  
 645 650 655

Ser Lys Tyr Ile Leu Arg Trp Arg Pro Val Ser Ile Pro Pro Arg Asn  
 660 665 670

Leu Gly Tyr  
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 atcaacagtg ggagcggacc tacctaggca atgcgttggt ttgtacttgt tatggaggaa 300  
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 ctgggaacac ttaccgagtg ggtgacactt atgagcgtcc taaagactcc atgatctggg 420  
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 gcatcacttg cacttctaga aatagatgca acgatcagga cacaaggaca tcctatagaa 780

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gatctggccc cttcacccgat gttcgtgcag ctgtttacca accgcagcct cccccccagc	960
ctcctcccta tggccactgt gtcacagaca gtgggtgtgg ctactctgtg gggatgcagt	1020
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agtttgggtt ctgcccctatg gctgcccacg aggaaatctg cacaaccaat gaaggggtca	1440
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agaagtatgt gcatggtgtc agataccagt gctactgcta tggccgtggc attggggagt	1800
ggcattgcca acctttacag acctatccaa gctcaagtgg tcctgtcgaa gtatttatca	1860
ctgagactcc gagtcagccc aactcccacc ccatecagtg gaatgcacca cagccatctc	1920
acatttccaa gtacattctc aggtggagac ctgtgagtat cccaccaga aaccttgat	1980
actgagtctc ctaatcttat caattctgat ggtttctttt tttcccagct tttgagccaa	2040
caactctgat taactattcc tatagcatth actatatttg tttagtgaac aaacaatatg	2100
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 <213> Homo sapiens

<400> 3

Ile	Ser	Lys	Tyr	Ile	Leu	Arg	Trp	Arg	Pro	Val	Ser	Ile	Pro	Pro	Arg
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Asn Leu Gly Tyr  
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<210> 4  
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<213> Homo sapiens

<400> 4

Gln Gln Trp Glu Arg Thr Tyr Leu Gly Asn Ala Leu Val Cys Thr Cys  
1 5 10 15

Tyr Gly Gly Ser Arg  
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<210> 5  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 5

Pro Cys Val Leu Pro Phe Thr Tyr Asn Asp Arg Thr Asp Ser Thr Thr  
1 5 10 15

Ser Asn Tyr Glu Gln Asp Gln  
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<210> 6  
<211> 20  
<212> PRT  
<213> Homo sapiens

<400> 6

Thr Asp His Thr Val Leu Val Gln Thr Arg Gly Gly Asn Ser Asn Gly  
1 5 10 15

Ala Leu Cys His  
20

<210> 7  
<211> 21  
<212> PRT  
<213> Homo sapiens

<400> 7

Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Ile Ala Tyr Ser Gln Leu  
1 5 10 15

Arg Asp Gln Cys Ile  
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<210> 8  
<211> 21  
<212> PRT  
<213> Homo sapiens

<400> 8

Gln Gln Trp Glu Arg Thr Tyr Leu Gly Asn Val Leu Val Cys Thr Cys  
1 5 10 15

Tyr Gly Gly Ser Arg  
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<210> 9  
<211> 39  
<212> PRT  
<213> Homo sapiens

<400> 9

Glu Pro Cys Val Leu Pro Phe Thr Tyr Asn Gly Arg Thr Phe Tyr Ser  
1 5 10 15

Cys Thr Thr Glu Gly Arg Gln Asp Gly His Leu Trp Cys Ser Thr Thr  
20 25 30

Ser Asn Tyr Glu Gln Asp Gln  
35

<210> 10  
<211> 21  
<212> PRT  
<213> Homo sapiens

<400> 10

Cys Thr Asp His Thr Val Leu Val Gln Thr Gln Gly Gly Asn Ser Asn  
1 5 10 15

Gly Ala Leu Cys His  
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<210> 11  
<211> 21  
<212> PRT  
<213> Homo sapiens

<400> 11

Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Thr Ala Tyr Ser Gln Leu  
1 5 10 15

Arg Asp Gln Cys Ile  
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<210> 12  
<211> 20  
<212> PRT  
<213> Homo sapiens

<400> 12

Ile Ser Lys Thr Ile Leu Arg Trp Arg Pro Lys Asn Ser Val Gly Arg  
1 5 10 15

Trp Lys Glu Ala  
20

<210> 13  
<211> 18  
<212> PRT  
<213> Homo sapiens

<400> 13

Asn Leu Val Ala Thr Cys Leu Pro Val Arg Ala Ser Leu Pro His Arg  
1 5 10 15

Leu Asn

<210> 14  
<211> 31  
<212> PRT  
<213> Homo sapiens

<400> 14

Met Leu Arg Gly Pro Gly Pro Gly Leu Leu Leu Ala Val Gln Cys  
1 5 10 15



Leu Gly Thr Ala Val Pro Ser Thr Gly Ala Ser Lys Ser Lys Arg  
20 25 30

<210> 15  
<211> 20  
<212> PRT  
<213> Homo sapiens

<400> 15

Gln Ala Gln Gln Met Val Gln Pro Gln Ser Pro Val Ala Val Ser Gln  
1 5 10 15

Ser Lys Pro Gly  
20

<210> 16  
<211> 45  
<212> PRT  
<213> Homo sapiens

<400> 16

Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn Gln Gln Trp Glu Arg  
1 5 10 15

Thr Tyr Leu Gly Asn Ala Leu Val Cys Thr Cys Tyr Gly Gly Ser Arg  
20 25 30

Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu Glu Thr  
35 40 45

<210> 17  
<211> 42  
<212> PRT  
<213> Homo sapiens

<400> 17

Cys Asn Asp Gln Asp Thr Arg Thr Ser Tyr Arg Ile Gly Asp Thr Trp  
1 5 10 15

Ser Lys Lys Asp Asn Arg Gly Asn Leu Leu Gln Cys Ile Cys Thr Gly  
20 25 30

Asn Gly Arg Gly Glu Trp Lys Cys Glu Arg  
35 40

<210> 18  
<211> 35  
<212> PRT  
<213> Homo sapiens

<400> 18

His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe Thr Asp  
1 5 10 15

Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro Pro Pro  
20 25 30

Tyr Gly His  
35

<210> 19  
<211> 37  
<212> PRT  
<213> Homo sapiens

<400> 19

Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val Gly Met Gln Trp Leu  
1 5 10 15

Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr Cys Leu Gly Asn Gly  
20 25 30

Val Ser Cys Gln Glu  
35

<210> 20  
<211> 45  
<212> PRT  
<213> Homo sapiens

<400> 20

Thr Ala Val Thr Gln Thr Tyr Gly Gly Asn Ser Asn Gly Glu Pro Cys  
1 5 10 15

Val Leu Pro Phe Thr Tyr Asn Asp Arg Thr Asp Ser Thr Thr Ser Asn  
20 25 30

Tyr Glu Gln Asp Gln Lys Tyr Ser Phe Cys Thr Asp His  
35 40 45

<210> 21  
<211> 48  
<212> PRT  
<213> Homo sapiens

<400> 21

Cys Thr Thr Asn Glu Gly Val Met Tyr Arg Ile Gly Asp Gln Trp Asp  
1 5 10 15

Lys Gln His Asp Met Gly His Met Met Arg Cys Thr Cys Val Gly Asn  
20 25 30

Gly Arg Gly Glu Trp Thr Cys Ile Ala Tyr Ser Gln Leu Arg Asp Gln  
35 40 45

<210> 22  
<211> 43  
<212> PRT  
<213> Homo sapiens

<400> 22

Cys Ile Val Asp Asp Ile Thr Tyr Asn Val Asn Asp Thr Phe His Lys  
1 5 10 15

Arg His Glu Glu Gly His Met Leu Asn Cys Thr Cys Phe Gly Gln Gly  
20 25 30

Arg Gly Arg Trp Lys Cys Asp Pro Val Asp Gln  
35 40

<210> 23  
<211> 48  
<212> PRT  
<213> Homo sapiens

<400> 23

Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly Asp Ser Trp  
1 5 10 15

Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr Gly Arg  
20 25 30

Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr Pro Ser Ser  
35 40 45

<210> 24  
<211> 39  
<212> PRT  
<213> Homo sapiens

<400> 24

Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser Gln Pro Asn  
1 5 10 15

Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His Ile Ser Lys  
20 25 30

Tyr Ile Leu Arg Trp Arg Pro  
35

<210> 25  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 25

Val Ser Ile Pro Pro Arg Asn Leu Gly Tyr  
1 5 10

<210> 26  
<211> 44  
<212> PRT  
<213> Homo sapiens

<400> 26

Trp Phe Leu Phe Phe Pro Ala Phe Glu Pro Thr Thr Leu Ile Asn Tyr  
1 5 10 15

Ser Tyr Ser Ile Tyr Tyr Ile Cys Leu Val Asn Lys Gln Tyr Val Val  
20 25 30

Asn Ile Asp Leu Thr Glu Lys Lys Lys Lys Lys  
35 40

<210> 27  
<211> 6  
<212> PRT  
<213> Homo sapiens

<400> 27

Met Leu Arg Gly Pro Gly

1 5

<210> 28  
<211> 65  
<212> PRT  
<213> Homo sapiens

<400> 28

Thr Val Leu Val Gln Thr Arg Gly Gly Asn Ser Asn Gly Ala Leu Cys  
1 5 10 15

His Phe Pro Phe Leu Tyr Asn Asn His Asn Tyr Thr Asp Cys Thr Ser  
20 25 30

Glu Gly Arg Arg Asp Asn Met Lys Trp Cys Gly Thr Thr Gln Asn Tyr  
35 40 45

Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro Met Ala Ala His Glu Glu  
50 55 60

Ile  
65

<210> 29  
<211> 2  
<212> PRT  
<213> Homo sapiens

<400> 29

Val Ser  
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<210> 30  
<211> 4  
<212> PRT  
<213> Homo sapiens

<400> 30

Ser Tyr Gln Phe  
1

<210> 31  
<211> 33  
<212> PRT  
<213> Homo sapiens

<400> 31

Trp Phe Leu Phe Phe Pro Ala Phe Glu Pro Thr Thr Leu Ile Asn Tyr  
1 5 10 15

Ser Tyr Ser Ile Tyr Tyr Ile Cys Leu Val Asn Lys Gln Tyr Val Val  
20 25 30

Asn

<210> 32

<211> 3

<212> PRT

<213> Homo sapiens

<400> 32

Ile Asp Leu  
1

<210> 33

<211> 8

<212> PRT

<213> Homo sapiens

<400> 33

Thr Glu Lys Lys Lys Lys Lys Lys  
1 5

<210> 34

<211> 24

<212> PRT

<213> Homo sapiens

<400> 34

Glu Pro Cys Val Leu Pro Phe Thr Tyr Asn Asp Arg Thr Asp Ser Thr  
1 5 10 15

Thr Ser Asn Tyr Glu Gln Asp Gln  
20

<210> 35

<211> 20

<212> PRT

<213> Homo sapiens

<400> 35

Thr Asp His Thr Val Leu Val Gln Thr Arg Gly Gly Asn Ser Asn Gly  
1 5 10 15

Ala Leu Cys His  
20

<210> 36  
<211> 657  
<212> PRT  
<213> Homo sapiens

<400> 36

Met Leu Arg Gly Pro Gly Pro Gly Leu Leu Leu Ala Val Leu Cys  
1 5 10 15

Leu Gly Thr Ala Val Pro Ser Thr Gly Ala Ser Lys Ser Lys Arg Gln  
20 25 30

Ala Gln Gln Met Val Gln Pro Gln Ser Pro Val Ala Val Ser Gln Ser  
35 40 45

Lys Pro Gly Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn Gln Gln  
50 55 60

Trp Glu Arg Thr Tyr Leu Gly Asn Val Leu Val Cys Thr Cys Tyr Gly  
65 70 75 80

Gly Ser Arg Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu Glu Thr  
85 90 95

Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp Thr Tyr  
100 105 110

Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile Gly Ala  
115 120 125

Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His Glu Gly  
130 135 140

Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His Glu Thr  
145 150 155 160

Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys Gly Glu

165

170

175

Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp His Ala Ala Gly  
 180 185 190

Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln Gly Trp  
 195 200 205

Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg Ile Thr  
 210 215 220

Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr Ser Tyr  
 225 230 235 240

Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn Leu Leu  
 245 250 255

Gln Cys Ile Cys Thr Gly Asn Gly Arg Gly Glu Trp Lys Cys Glu Arg  
 260 265 270

His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe Thr Asp  
 275 280 285

Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro Pro Pro  
 290 295 300

Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val Gly Met  
 305 310 315 320

Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr Cys Leu  
 325 330 335

Gly Asn Gly Val Ser Cys Gln Glu Thr Ala Val Thr Gln Thr Tyr Gly  
 340 345 350

Gly Asn Ser Asn Gly Glu Pro Cys Val Leu Pro Phe Thr Tyr Asn Gly  
 355 360 365

Arg Thr Phe Tyr Ser Cys Thr Thr Glu Gly Arg Gln Asp Gly His Leu  
 370 375 380

Trp Cys Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys Tyr Ser Phe  
 385 390 395 400



Cys Thr Asp His Thr Val Leu Val Gln Thr Gln Gly Gly Asn Ser Asn  
405 410 415

Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His Asn Tyr Thr  
420 425 430

Asp Cys Thr Ser Glu Gly Arg Arg Asp Asn Met Lys Trp Cys Gly Thr  
435 440 445

Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro Met Ala  
450 455 460

Ala His Glu Glu Ile Cys Thr Thr Asn Glu Gly Val Met Tyr Arg Ile  
465 470 475 480

Gly Asp Gln Trp Asp Lys Gln His Asp Met Gly His Met Met Arg Cys  
485 490 495

Thr Cys Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Tyr Ala Tyr Ser  
500 505 510

Gln Leu Arg Asp Gln Cys Ile Val Asp Asp Ile Thr Tyr Asn Val Asn  
515 520 525

Asp Thr Phe His Lys Arg His Glu Glu Gly His Met Leu Asn Cys Thr  
530 535 540

Cys Phe Gly Gln Gly Arg Gly Arg Trp Lys Cys Asp Pro Val Asp Gln  
545 550 555 560

Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly Asp Ser Trp  
565 570 575

Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr Gly Arg  
580 585 590

Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr Pro Ser Ser  
595 600 605

Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser Gln Pro Asn  
610 615 620

Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His Ile Ser Lys  
625 630 635 640

Tyr Ile Leu Arg Trp Arg Pro Val Ser Ile Pro Pro Arg Asn Leu Gly  
645 650 655

Tyr

<210> 37  
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<212> PRT  
<213> Homo sapiens

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<222> (676)..(676)  
<223> Xaa can be any naturally occurring amino acid

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<223> Xaa can be any naturally occurring amino acid

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<223> Xaa can be any naturally occurring amino acid

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<222> (717)..(717)  
<223> Xaa can be any naturally occurring amino acid

<400> 37

Asn Leu Val Ala Thr Cys Leu Pro Val Arg Ala Ser Leu Pro His Arg  
1 5 10 15

Leu Asn Met Leu Arg Gly Pro Gly Pro Gly Leu Leu Leu Leu Ala Val  
20 25 30

Leu Cys Leu Gly Thr Ala Val Pro Ser Thr Gly Ala Ser Lys Ser Lys  
35 40 45

Arg Gln Ala Gln Gln Met Val Gln Pro Gln Ser Pro Val Ala Val Ser  
50 55 60

Gln Ser Lys Pro Gly Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn  
65 70 75 80

Gln Gln Trp Glu Arg Thr Tyr Leu Gly Asn Val Leu Val Cys Thr Cys  
85 90 95

Tyr Gly Gly Ser Arg Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu  
100 105 110

Glu Thr Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp  
115 120 125

Thr Tyr Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile  
130 135 140

Gly Ala Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His  
145 150 155 160

Glu Gly Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His  
165 170 175

Glu Thr Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys  
180 185 190

Gly Glu Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp His Ala  
195 200 205

Ala Gly Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln  
210 215 220

Gly Trp Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg  
225 230 235 240

Ile Thr Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr  
245 250 255

Ser Tyr Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn  
260 265 270

Leu Leu Gln Cys Ile Cys Thr Gly Asn Gly Arg Gly Glu Trp Lys Cys  
275 280 285

Glu Arg His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe

290

295

300

Thr Asp Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro  
 305 310 315 320

Pro Pro Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val  
 325 330 335

Gly Met Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr  
 340 345 350

Cys Leu Gly Asn Gly Val Ser Cys Gln Glu Thr Ala Val Thr Gln Thr  
 355 360 365

Tyr Gly Gly Asn Ser Asn Gly Glu Pro Cys Val Leu Pro Phe Thr Tyr  
 370 375 380

Asn Gly Arg Thr Phe Tyr Ser Cys Thr Thr Glu Gly Arg Gln Asp Gly  
 385 390 395 400

His Leu Trp Cys Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys Tyr  
 405 410 415

Ser Phe Cys Thr Asp His Thr Val Leu Val Gln Thr Gln Gly Gly Asn  
 420 425 430

Ser Asn Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His Asn  
 435 440 445

Tyr Thr Asp Cys Thr Ser Glu Gly Arg Arg Asp Asn Met Lys Trp Cys  
 450 455 460

Gly Thr Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro  
 465 470 475 480

Met Ala Ala His Glu Glu Ile Cys Thr Thr Asn Glu Gly Val Met Tyr  
 485 490 495

Arg Ile Gly Asp Gln Trp Asp Lys Gln His Asp Met Gly His Met Met  
 500 505 510

Arg Cys Thr Cys Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Tyr Ala  
 515 520 525

Tyr Ser Gln Leu Arg Asp Gln Cys Ile Val Asp Asp Ile Thr Tyr Asn  
530 535 540

Val Asn Asp Thr Phe His Lys Arg His Glu Glu Gly His Met Leu Asn  
545 550 555 560

Cys Thr Cys Phe Gly Gln Gly Arg Gly Arg Trp Lys Cys Asp Pro Val  
565 570 575

Asp Gln Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly Asp  
580 585 590

Ser Trp Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr  
595 600 605

Gly Arg Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr Pro  
610 615 620

Ser Ser Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser Gln  
625 630 635 640

Pro Asn Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His Ile  
645 650 655

Ser Lys Tyr Ile Leu Arg Trp Arg Pro Val Ser Ile Pro Pro Arg Asn  
660 665 670

Leu Gly Tyr Xaa Val Ser Xaa Ser Gln Phe Xaa Trp Phe Leu Phe Phe  
675 680 685

Pro Ala Phe Glu Pro Thr Thr Leu Ile Asn Tyr Ser Tyr Ser Ile Tyr  
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Tyr Ile Cys Leu Val Asn Lys Gln Tyr Val Val Asn Xaa Ile Asp  
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<210> 38

<211> 44

<212> PRT

<213> Homo sapiens

<400> 38

Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp Thr Tyr  
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Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile Gly Ala  
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Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg  
35 40

<210> 39  
<211> 45  
<212> PRT  
<213> Homo sapiens

<400> 39

Cys His Glu Gly Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg  
1 5 10 15

Pro His Glu Thr Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn  
20 25 30

Gly Lys Gly Glu Trp Thr Cys Lys Pro Ile Ala Glu Lys  
35 40 45

<210> 40  
<211> 45  
<212> PRT  
<213> Homo sapiens

<400> 40

Cys Phe Asp His Ala Ala Gly Thr Ser Tyr Val Val Gly Glu Thr Trp  
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Glu Lys Pro Tyr Gln Gly Trp Met Met Val Asp Cys Thr Cys Leu Gly  
20 25 30

Glu Gly Ser Gly Arg Ile Thr Gly Thr Ser Arg Asn Arg  
35 40 45

<210> 41  
<211> 1926  
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<400> 41

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<210> 42  
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<400> 42

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Arg Asp Gln Cys Ile  
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<210> 43  
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 <213> Homo sapiens

<400> 43

Ile Ser Lys Tyr Ile Leu Arg Trp Arg Pro Lys Asn Ser Val Gly Arg  
 1 5 10 15

Trp Lys Glu Ala  
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<210> 44  
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 <212> PRT  
 <213> Homo sapiens

<400> 44

Asn Leu Val Ala Thr Cys Leu Pro Val Arg Ala Ser Leu Pro His Arg  
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Leu Asn Met Leu Arg Gly Pro Gly Pro Gly Leu Leu Leu Leu Ala Val  
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Leu Cys Leu Gly Thr Ala Val Pro Ser Thr Gly Ala Ser Lys Ser Lys  
 35 40 45



Arg Gln Ala Gln Gln Met Val Gln Pro Gln Ser Pro Val Ala Val Ser  
50 55 60

Gln Ser Lys Pro Gly Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn  
65 70 75 80

Gln Gln Trp Glu Arg Thr Tyr Leu Gly Asn Val Leu Val Cys Thr Cys  
85 90 95

Tyr Gly Gly Ser Arg Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu  
100 105 110

Glu Thr Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp  
115 120 125

Thr Tyr Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile  
130 135 140

Gly Ala Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His  
145 150 155 160

Glu Gly Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His  
165 170 175

Glu Thr Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys  
180 185 190

Gly Glu Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp His Ala  
195 200 205

Ala Gly Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln  
210 215 220

Gly Trp Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg  
225 230 235 240

Ile Thr Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr  
245 250 255

Ser Tyr Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn  
260 265 270

Leu Leu Gln Cys Ile Cys Thr Gly Asn Gly Arg Gly Glu Trp Lys Cys  
275 280 285

Glu Arg His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe  
290 295 300

Thr Asp Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro  
305 310 315 320

Pro Pro Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val  
325 330 335

Gly Met Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr  
340 345 350

Cys Leu Gly Asn Gly Val Ser Cys Gln Glu Thr Ala Val Thr Gln Thr  
355 360 365

Tyr Gly Gly Asn Ser Asn Gly Glu Pro Cys Val Leu Pro Phe Thr Tyr  
370 375 380

Asn Gly Arg Thr Phe Tyr Ser Cys Thr Thr Glu Gly Arg Gln Asp Gly  
385 390 395 400

His Leu Trp Cys Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys Tyr  
405 410 415

Ser Phe Cys Thr Asp His Thr Val Leu Val Gln Thr Gln Gly Gly Asn  
420 425 430

Ser Asn Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His Asn  
435 440 445

Tyr Thr Asp Cys Thr Ser Glu Gly Arg Arg Asp Asn Met Lys Trp Cys  
450 455 460

Gly Thr Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro  
465 470 475 480

Met Ala Ala His Glu Glu Ile Cys Thr Thr Asn Glu Gly Val Met Tyr  
485 490 495

Arg Ile Gly Asp Gln Trp Asp Lys Gln His Asp Met Gly His Met Met

500

505

510

Arg Cys Thr Cys Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Tyr Ala  
 515 520 525

Tyr Ser Gln Leu Arg Asp Gln Cys Ile Val Asp Asp Ile Thr Tyr Asn  
 530 535 540

Val Asn Asp Thr Phe His Lys Arg His Glu Glu Gly His Met Leu Asn  
 545 550 555 560

Cys Thr Cys Phe Gly Gln Gly Arg Gly Arg Trp Lys Cys Asp Pro Val  
 565 570 575

Asp Gln Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly Asp  
 580 585 590

Ser Trp Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr  
 595 600 605

Gly Arg Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr Pro  
 610 615 620

Ser Ser Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser Gln  
 625 630 635 640

Pro Asn Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His Ile  
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Ser Lys Tyr Ile Leu Arg Trp Arg Pro Lys Asn Ser Val Gly Arg Trp  
 660 665 670

Lys Glu Ala Thr Ile Pro Gly His Leu Asn Ser Tyr Thr Ile Lys Gly  
 675 680 685

Leu Lys Pro Gly Val Val Tyr Glu Gly Gln Leu Ile Ser Ile Gln Gln  
 690 695 700

Tyr Gly His Gln Glu Val Thr Arg Phe Asp Phe Thr Thr Thr Ser Thr  
 705 710 715 720